

# EUROPEAN PATENT OFFICE

## Patent Abstracts of Japan

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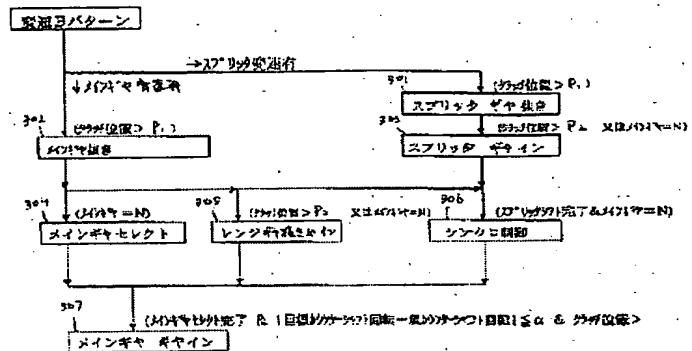
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APPLICANT : ISUZU MOTORS LTD;

INVENTOR : TAKI MASAFUMI;

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TITLE : AUTOMATIC TRANSMISSION FOR VEHICLE



ABSTRACT : PROBLEM TO BE SOLVED: To shorten the whole shift time at the downshift of the whole transmission accompanied by the downshift of a range gear.

SOLUTION: This automatic transmission for a vehicle is provided with at least a main gear and a range gear positioned on the output side, and a shift control means for executing the shift control of the main gear and range gear. The main gear does not have a mechanical synchronizing mechanism, and specified synchronous control is executed at the shift of the main gear. The synchronous control includes countershaft brake control at upshift or double clutch control at downshift, and the downshift of the range gear and double clutch control are simultaneously performed at the downshift of the whole transmission leading to the downshift of the range gear.

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